extends this inflammation to the layer between the chorion and amnion is not clear. An inflammation of the placental substance itself with small-cell infiltration and infiltration between the villi of the chorion could not be clearly demonstrated in any case.

GYNECOLOGY

UNDER THE CHARGE OF

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Action of Salicylates on the Uterus.—Many text-books of pharmacology mention that abortion sometimes occurs during the treatment of acute rheumatism with salicylates, but that it is uncertain which of these factors is the cause. Therefore in order to determine more definitely the relationship existing between the drug, the disease and abortion, GUNN and GOLDBERG (*Jour. Pharmacol. and Exper. Therap.*, 1922, 19, 207) performed experiments which showed that salicylate of soda has a definite stimulating action on the uterus, but that this action is not powerful; for instance, on the isolated uterus it is only half as strong as sodium carbonate and possibly less than one-fortieth as strong as quinine hydrochloride. It was noticed that when large doses were gradually introduced into the blood, as occurs when salicylates are given therapeutically by mouth, the stimulation of the uterus was much less marked. The stimulation did not appear to these investigators to be so pronounced as to suggest that it is likely to be of any great importance in the production of abortion, however, when salicylates are administered clinically very wide variations are found in the amounts given before toxic symptoms appear, and it is not impossible that there may also be considerable differences in the amounts necessary to influence the uterus. Acute rheumatism is practically universally treated with salicylates and these investigators conclude that if salicylates had a greater abortifacient action than their experiments show, the incidence of abortion in rheumatic fever would be greater than it is. In fact since the effect of salicylates is so apparent on rheumatic fever and so slight on the uterus, it is possible that the reason why fewer miscarriages are seen in rheumatic fever than in the other acute fevers is because of the rapid control of the former by sodium salicylate.

Effect of Radiation on the Blood.—The results of the analysis of the experiments performed by LEVIN (*Am. Jour. Roentgenol.*, 1922, 9, 112) to determine the action of radium and roentgen rays on the blood and

the blood-forming organs tends to confirm the prevailing opinion that the lymphocyte is the most radio-sensitive cell in the animal organism. The change in the numerical relationship of the two types of white cells was not accompanied by a noticeable change in the total leukocyte count. Apparently the mechanism of the action of the rays on the leukocytes of the blood consists in the destruction of the lymphocytes, which is then followed by the release of the polymorphonuclear leukocyte from the bone marrow or by an overproduction of this type of cell by the blood-forming organs. Certain investigators maintain that the polymorphonuclear leukocytes are the type of the blood cells most readily destroyed by the rays. However, the analysis of their results shows that the destruction of the polymorphonuclear leukocytes only takes place as the final result of the action of a lethal dose of the rays which produces ultimately a severe general leukopenia. In the present investigation however, only such amounts of radium and roentgen-ray were given that the animals could completely recover after the lapse of a certain time and the blood picture again become normal. The most important phenomenon observed in the course of this study is the difference with which the two species of animals, the frog and the rabbit, react to the action of radium and the roentgen-ray. In the frog the same general effect was obtained on the blood by the amount of roentgen raying employed in this investigation, as well as by the insertion of a glass capillary containing 1.0 to 9.6 millicuries of radium emanation. The blood of the rabbits reacted to the roentgen-rays in a manner identical with that of the frog. On the other hand, an insertion into the spleen or the bone marrow of a rabbit of 2 or 4 capillaries, that is, 2 or or 4 times the amount of radium emanation inserted into the frog, produced no change in the blood of the rabbit, though it produced marked local effect on the spleen and bone marrow. These comparative findings in the two species of animals and the two types of radiation are of considerable importance to the subject of radiotherapy from the two following standpoints: The subjects of the relative therapeutic efficiency of radium and roentgen-rays of the higher or lower voltage of the electric current producing the roentgen-rays, of the correct methods of physical measurements of the rays, whether photographic or ionization methods, for instance, and the correct amounts to be used, are in the order of the day. However, these subjects are treated chiefly from the standpoint of physics rather than from that of biology. There cannot be any doubt that measured by photography and ionization methods or generally considered from its physical aspect one roentgen-ray application as employed in the present investigation and one capillary tube containing 1.0 (or less) millicuries of radium emanation inserted into the frog and left there to decay represent two qualitatively and quantitively different entities. Nevertheless they must be considered quite analogous biologically, since they produce the identical effect on the blood of the frog. This indicated clearly that for biology and medicine a biological standard of measurement would be of far greater value than the physical methods. It may be added that the action of the rays on normal blood and lymphoid tissue is of greater importance than their action on the skin, the more so that the radium and roentgen-ray burns are most probably due to the change in the lymphoid tissue of the walls of the bloodvessels. The second phenomenon observed in

this investigation further illustrates the importance of the biological differences for the ultimate result of the action of the rays. The roentgen-rays produce a change in the blood picture of the rabbit because the square surface of its body is greater than that of the frog, and consequently the former receives a greater amount of radiation, though all the other conditions of the roentgen-ray apparatus were the same as those used in the frog. The radium emanation tubes produced no change in the blood of the rabbit, though the amount was more than sufficient to produce a change in the blood of the frog. The reason for it lies in the fact that the effect is distributed in the larger quantity of the blood of the rabbit and becomes so small as not to be perceptible. At the same time the local effect of the radium emanation is very marked. Two conclusions may thus be drawn from the analysis of the experiments. First, that radium, as compared with roentgen-rays will produce the same and even a more marked local effect with far less general disturbance of the blood. Second, that the larger the square surface of the entry of the roentgen-rays into the organism the more severe is the general effect on the blood.

Trichomonas Vaginalis Vaginitis.—The presenting symptom of trichomonas vaginalis vaginitis, according to the experience of HARTWELL (*Colorado Med.*, 1922, **19**, 86), is a vaginal discharge which is so irritating as to be "scalding" to the skin with which it comes in contact and so profuse as to necessitate the wearing of a napkin; it is so perversely persistent as to fail to respond to ordinary measures. The scalding of the skin is often so severe that the patient is handicapped in the performance of her duties by day and the associated pruritus is so intense that her night's sleep is disturbed. During the menstrual period however, the irritation and itching usually subside. In addition to this the discharge is frequently so malodorous that it interferes with the patient's social activities. When a patient presenting these symptoms is examined it is often noted that the skin on the inner aspect of the thighs and over the perineum is reddened, if not eroded, by the irritating vaginal discharge. On spreading the labia the vestibule is usually bathed with a thin white secretion and the mucous surfaces of the labia minora and the caruncuIæ myrtiformes may present minute bright red macules, while occasionally small condylomata stud the labia. When the speculum is introduced, there is seen in the vault a quantity of puriform secretion notably full of bubbles, and this secretion may be superlatively malodorous. On removing it, the vaginal mucosa presents the beefy red appearance of any vaginitis if the process be acute, or is quite normal in color if the process is chronic. In either case however, the characteristic raised papules, irregularly scattered over the mucosa are in evidence. They may be solitary or aggregated in small groups and not infrequently the apices of the papules are eroded, presenting superficial ulcers of small size which may bleed. The appearance presented by the vaginal mucosa is strongly suggestive of a dermatitis produced by a chemical irritant such as iodine, or the early lesions of a herpes zoster. The reaction of the vagina is very strongly acid. Such appearances are almost pathognomonic of a trichomonas vaginalis vaginitis, but the diagnosis is confirmed by the microscopic examination of a small bit of the bubbly secretion when large numbers

of motile flagellated trichomonades are easily recognized. In treating this condition, HARTWELL has obtained the most satisfactory results by placing soda bicarbonate powder in the vaginal vault. The following morning the patient takes a douche of plain water. In the afternoon the treatment is repeated. Daily treatments are required for about two weeks and every second day for another four weeks before the vagina is free from trichomonades. The principle of the treatment is to maintain the reaction of the vagina strongly alkaline, which alkalinity seems to be inimical to the life and growth of the trichomonas vaginalis.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF

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Complement-fixation Tests in the Diagnosis of Tuberculous Infections. —The results obtained by various investigators, employing the complement-fixation test in tuberculous infections have not been concordant and observers have differed from each other in the percentage of positive findings in cases of definite tuberculosis, as well as in their views concerning the diagnostic and prognostic value of the test. Realizing that such divergencies can be attributed in part to differences in the technic used, SELLERS and RAMSBOTTOM (*Jour. Path. and Bacteriol.*, 1922, **25**, 247) conducted numerous complement-fixation tests on the blood and spinal fluid of adults and the blood of children with and without clinical evidence of tuberculosis, and obtained results which agreed, on the whole, with those of other observers. Seven different strains of tubercle bacilli were used for preparing five antigens found useful by other workers. Accordingly, 3 of these antigens were employed in comparative tests on 40 adult cases of pulmonary tuberculosis which yielded from 75 to 90 per cent positive according to the antigen, 40 cases of bone tuberculosis, where 50 to 55 per cent were positive and 15 cases of non-syphilitic spinal fluids in which the positives varied from 6 to 33 per cent. Varying percentages of negatives were encountered in undoubted cases of tuberculosis and a few non-tuberculous sera gave positive reactions. Moreover, nearly one-half the cases of syphilis in children in which there was no clinical evidence of tuberculosis gave a positive tuberculosis test. In 13 cases of non-tuberculous spinal fluid, 4 were positive and 9 negative; in 12 cases of meningitis in which there was a suspicion of a tuberculous origin, 6 were positive and 6 negative and in 11 cases of tuberculous meningitis, all were positive. As a result of their investigations, the authors "are not satisfied that